User Manual

DIGI-SENSE™

Video Borescope

Model 20250-27

CE

THE STANDARD IN PRECISION MEASUREMENT

Introduction

The Digi-Sense Video Borescope (Model 20250-27) is ideal for the inspection of ductwork, wiring locations, piping, vehicles, and much more. Capture both still and video images for playback on LCD, TV, or a computer monitor. The adjustable LED light on the camera tip provides the necessary light in dimly lit areas or adjusts down to eliminate washout when viewing reflective objects.

Unpacking

Check individual parts against the list of items below. If anything is missing or damaged, please contact your instrument supplier immediately.

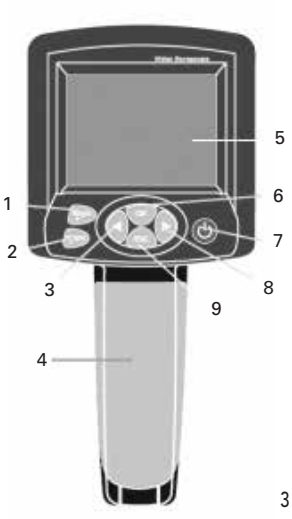
1. Borescope with camera
2. 3.7 V lithium battery (installed)
3. USB cable
4. DC5V charger
5. Video output cable
6. Mirror, hook, and magnet
7. User manual

Key Features

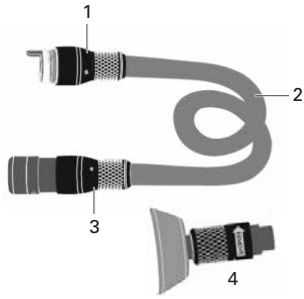
- Image and video recording
- LCD display with time and date
- Built-in 65M flash capacity
- Menu languages: English, French, German, Spanish
- Four LED lights for operation in dark environments
- TV-OUT
- USB charging (Li battery)
- USB2.0 connection to computer
- Image photo format (JPG, JPEG)
- Video format (MP4, AVI, 3GP, ASF)

Borescope Description

1. **BACKLIGHT INCREASE** button
2. **BACKLIGHT DECREASE** button
3. **Up** button
4. Hand shank (Li battery compartment)
5. LCD
6. **OK** button
7. **ON/OFF** button
8. **DOWN** button
9. **QUIT** button

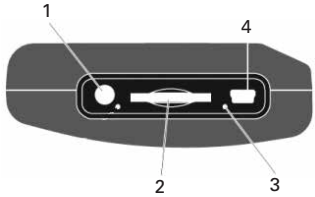


Attachment Description



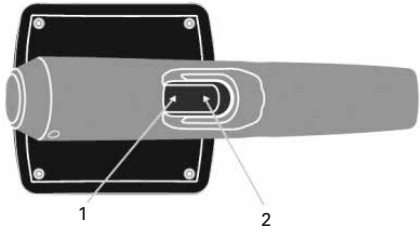
1. Socket to connect to the motherboard (camera socket)
2. Gooseneck
3. Camera
4. Motherboard socket

Panel Description



1. TV-OUT
2. SD card
3. **RESET** button jack
4. USB and charging port

Shank Description



1. **PHOTO** button (back of the instrument)
2. **VIDEO** button (back of the instrument)

Setup and Operation

Power

Press the **ON/OFF** button for three seconds to enter camera mode. Hold the **ON/OFF** button for three more seconds to close the instrument.

LED Adjustments

To adjust the built-in LED light on the camera head: While in camera mode, increase the light level by pressing the **BRIGHT+** button until the brightest level displays on the top left of the screen. Decrease the light level by pressing the **BRIGHT-** button until the light turns off. (10=brightest; 1=darkest and when at 0, the LED turns off.)

Rotating Images

In camera mode, press the **UP** button or the **DOWN** button to rotate image angle from 0° to 180°. Also, press the **UP** button or the **DOWN** button to adjust the angle on the screen to display a suitable image.

Saving Images

In camera mode, press **PHOTO** button once to save an image. To save the current time and date on the image, select **DATE LABEL** in the System Setup/Time menu. Select On and the current time and date will display on the saved image. Select Off and no time and date will display on the saved image.

Saving Video

Hold the **VIDEO** button for three seconds to start recording video. A video symbol will flicker and display in the upper left side of the screen. The memory capacity will display at the left bottom of the screen indicating the current available memory capacity. When the capacity is depleted, a dialog box will appear to indicate insufficient memory capacity. Stop recording by pressing the VIDEO button. The video can be played in the System Setup>Explorer>Video Player menu.

System Setup

1. Press the **DOWN** button, to move cursor to the right; press the **UP** button to move it to the left. All of the icons can be selected by using the **UP/DOWN** buttons. In both the Image and Video selection interface, the **UP/DOWN** button is used for selection.

Current Time, Battery Power And Sd Figure
Main Menu Icon In Corresponding Functional
The current state of the operational keys

2. With the unit powered on, press the **OK** button. The following dialog box pops up: Press the **UP/DOWN** buttons to move the cursor to YES, then press the **OK** button to enter into system setting, shown at right:

3. For the Language setting: Press the **OK** button to enter into the Language Setting. Select your preferred language with the **UP/DOWN** buttons, then press the **OK** button to save the language setting and return to the main menu. Press the **ESC** button to quit.

4. To Set Time: Press the **UP/DOWN** buttons to select Time and press the **OK** button to enter into the Time setting. Move the cursor with **UP/DOWN** buttons to the functions you want to set up. Press **PHOTO** button on back and **VIDEO** button on back to adjust the date and time. Press the **OK** button to save the time setting and return to the main menu or press the **ESC** button to exit to the camera mode.

   For the Date Label: To display date and time on the screen and image, scroll down to Date Label and select On by pressing the **OK** button; to turn off select Off and press the **OK** button.

5. For the Automatic Shutdown setting: Press the **OK** button to enter into the Automatic Shut Down setting. Use the **UP/DOWN** buttons to select from the following options:

   - Never
   - 3 Min
   - 15 Min
   - 60 Min

   Press the **OK** button to save your setting and return to the main menu. The unit will turn off after not operating according to the setting you chose. **Note:** The Auto-Off will not be activated when recording or playing video.

6. For TV-OUT options: Press the **OK** button to enter into the TV-OUT setting. Insert the TV-OUT video cable into the earphone, and plug the other side of the cable into the video components on your television (yellow for VIDEO, red and white for left and right channels).

   Select the NTSC Output or PAL Output menu options in accordance with the video format of your television and press the **OK** button to enter. The content will still be controlled with the instrument but displayed on the television.

   Select LCD output and **OK** button, to return to LCD display. If NTSC Output or PAL Output is selected with no video cable connecting to the television, press the power **ON/OFF** button to turn off the LCD display and press this button again to turn it on.

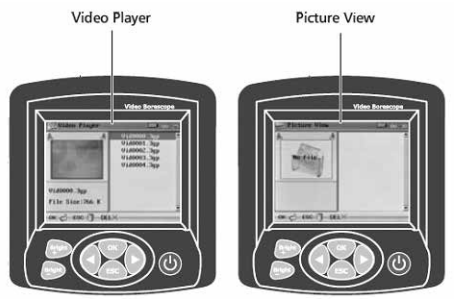
7. To select Memory options:
   The borescope is set up to use either built-in flash memory or a removable SD card. To select memory option, go to Memory and press the **OK** button. Press the **PHOTO** button on the back and **VIDEO** button on the back to select the memory medium (either Flash or SD). Select Work space and press the **OK** button to confirm. If formatting operation is needed, select Format then press the **OK** button. A pop-up box will appear and Yes should be selected to complete formatting. Select Exit and press the **OK** button to return to the main menu.

8. For Picture and Video Playback: Press the **OK** button to enter into Explorer.
   - Select Video Player and press the **OK** button for the video interface.
   - Select Picture View and press the **OK** button for the picture interface.

   Use the **UP/DOWN** buttons to toggle through pictures or videos. Select the **OK** button to view the pictures or video on the LCD. Press the **ESC** button to return to Explorer from picture and video playing.

   Select Exit to return to the main menu. **Note:** In the video/ picture directory, press the **BRIGHT +** button to delete the current video or photo (each press deletes one photo or video).

9. For the LCD setting: Select the **OK** button to enter into Settings. Use the **UP/DOWN** buttons to toggle through the options. Press the **PHOTO** button on the back and the **VIDEO** button on the back to increase or decrease the value. (The adjustment will produce a slight effect and can be identified in the camera mode only. This adjustment is not suggested for the instrument that has been calibrated before delivery. Press Default to return to the best-calibrated default value. Select the **OK** button to return to the main menu.



10. To set the Power-Saving Mode: Select the **OK** button to enter into Power. The power-saving mode will turn off the LCD after a set time while in system setup but keep the system running. Press any button to turn the LCD back on. Press the **UP/DOWN** buttons to select from the following options:

- Never
- 30s
- 60s
- 180s

Press the **OK** button to save your setting and return to the main menu. Power saving will not be activated under video mode or when browsing files.

11. To exit: In any setting in the system, press the **ESC** button to return back to camera mode.

Connecting to a Computer

Connect to a computer with the USB cable. The instrument will automatically power on and the LCD will display the USB icon for two seconds and then automatically turn off. Copy and delete controls are available by computer operation. The buttons on the instrument will be locked until disconnecting the USB cable. Once the cable is disconnected, the LCD will power up.

Charging

Connect the USB cable to the DC5V charger and borescope. The unit will automatically power on and enter into the System Setup mode with a battery icon blinking on the top right corner. This indicates the battery is charging. The icon will stop blinking when charging is completed.

All the buttons are locked and remain unavailable while the battery is charging. Disconnecting the USB cable will release the buttons.

Reset Function

If the system stops operating unexpectedly, press the **RESET** button on the left side of the instrument. The instrument can be operated normally after powering up.

Specifications

Display screen	3.2 inch TFT
Display pixel	240 (RGB) x 320
Photosensitive devices	1/4 inch CMOS
Sensor pixel	640 x 480
Photo resolution	640 x 480
Maximum number of frames (FPS)	30 FPS/S
Color digital (bit)	24
Focusing distance	Fixed at 5-15 cm
Gooseneck length	1 m (2 m/3 m selectable)
Camera diameter	17 mm
Video format	MPEG4/3GP/AVI/ASF
Photo format	JPEG
Camera video format	3GP
Saved image format	JPG(640 x 480)
SD card	MAX 32 GB
Flash memory	MAX 8 GB
Working voltage	Li battery 3.7V/2000mA
Video working current	Approx. 380mA
Static current	MAX 20UA
TV-OUT	PAL/NTSC system
Operating temperature	0 to 55°C (32 to 131°F)
Charging temperature	0 to 55°C (32 to 131°F)
Storage temperature	–20 to 60°C (–4 to 140°F)
Storage humidity	15% to 85%
Data output	USB data cable and SD card
Power supply	a 3.7V/2000mA/h battery (1860)
Size (L x W x H)	240 x 100 x 160 mm (9 7/16" x 3 15/16" x 6 9/32")

Maintenance, Recalibration, and Repair

- The gooseneck should not be bent to a diameter less than five inches.
- Take out the battery when the instrument is not in use for a long period of time.
- Clean the camera before operation.
- Use only a 3.7V Li battery.
- To avoid electrical shock, the instrument and gooseneck should not come in contact with high-voltage objects during operation.
- To avoid instrument damage and injury, the gooseneck cannot be inserted into rotational gear wheels.

For Product and Ordering Information, Contact:

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